

What is claimed is:

1. A network-based hardware and software system for enabling priority-based number switching from a lower priority access number to a higher
5 priority access number during a data session through monitoring current connection states of a user node connected to the network during session and comparing those states with current states of known alternate access numbers available to the user node during the network session, comprising:
 - a CTI-switch for establishing call connections and performing call
10 switching according to instruction formulated through the monitoring;
 - a network-hosted part of a software application for monitoring the current user-node connection states and the current states of the alternate access numbers and for directing the CTI-switch function based on results of the monitoring;
 - 15 at least two network-access nodes connected to the network, the access nodes each accessible through dialing a network-access number from the user node; and
 - a client-hosted part of the software application for listing access numbers, configuring priority states to the access numbers and for
20 communicating the pertinent data to the network-hosted part of the software application, characterized in that a user connected to the network using a lower priority access number may continue the network session while a higher priority access number available to the user's node is identified from a list of alternate numbers through the monitoring performed by the network-
25 hosted software application during the session, the identified number, also identified as currently accessible to the user's node, is either secured by the CTI-switch on behalf of the user, the user's node then disconnected and then re-connected to the secured number, or rendered to the user in a network

notification after which, the user may manually disconnect and then re-connect to the available number.

5 2. The network-based system of claim 1, wherein the network accessible through the access numbers is the Internet network.

3. The network-based system of claim 2, wherein the Internet is access through a telephony network.

10 4. The network-based system of claim 3, wherein the telephony network is the public-switched-telephony-network (PSTN).

15 5. The network-based system of claim 4, wherein the priority characteristics of the access numbers include at least the access and connection costs of using the numbers.

20 6. The network-based system of claim 5, wherein the lowest cost access number retains the highest priority, the priority ratings graduating down for each access number in a list of numbers, the highest cost access number retaining the lowest priority.

7. The network-based system of claim 6, wherein access numbers costing the same or exhibiting a negligible difference in cost to retain a same priority rating.

25 8. The network-based system of claim 4, wherein the priority characteristics of the access numbers include bandwidth characteristics of the associated network-access nodes.

9. The network-based system of claim 8, wherein a network-access number associated with a network-access node performing at higher bandwidth retains higher priority rating.

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10. The network-based system of claim 4, wherein priority characteristics for a network-access number include both cost characteristics and bandwidth characteristics of the associated network-access server node.

10 11. The network-based system of claim 7, wherein the network-hosted part of the software application is hosted at the CTI-switch.

12. The network-based system of claim 11, wherein the client-hosted part of the software application communicates to the network-hosted part of the software application through a telephone-access number and interactive-voice-response interaction.

13. The network-based system of claim 7, wherein the network-hosted part of the software application is hosted by network-connected server node.

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14. The network-based system of claim 13, wherein the network-hosted part of the software application communicates to the CTI switch through a network interface.

25 15. The network-based system of claim 14, wherein the network-hosted part of the software application communicates with the client-hosted part of the software application through an Internet path.

16. A software-control application for enabling priority-based number switching from a lower priority access number to a higher priority access number during a data session conducted by a user connected to a data-packet-network through one of a list of available access numbers comprising:

5 a network-hosted part of the software application for initiating and directing the priority-based number switching based on monitored results;

a client-hosted part of the software application for configuring at least one access number list including associated priority characteristics and communicating the listing characteristics to the network-hosted part of the software application; and

10 a network-communication path between the client-hosted part of the software application and the network-hosted part of the software application, the network-communication path enabling bi-directional communication between the parts of the software application, characterized in that the user engaged in a data session on the data-packet-network using a lower priority access number may during the session be switched according to software instruction from the lower priority access number to an identified higher priority access number during the same session without manual intervention required of the user.

17. The software-control application of claim 16, wherein the data-packet-network is the Internet network.

25 18. The software-control application of claim 17, wherein the user utilizes a personal computer for Internet connection using dial-up modem software.

19. The software-control application of claim 18, wherein the network-hosted part of the software application is hosted on a CTI telephony switch.

5 20. The software-control application of claim 19, wherein the network-hosted part of the application includes modules for monitoring a user connection, for storing and presenting a list of ISP-access numbers, for determining higher priority from the list, and for instructing the CTI telephone switch.

10 21. The software-control application of claim 18, wherein the network-hosted part of the software application is hosted on a network-connected server.

15 22. The software-control application of claim 21, wherein the network-hosted part of the software application includes modules for monitoring a user connection, for storing and presenting a list of ISP-access numbers, for determining higher priority from the list, for simulating an out-bound dialer, for Internet communication, for Internet navigation, for user notification, and for ringing-event detection.

20 23. The software-control application of claim 22, wherein the network-hosted part of the application controls CTI switch function through a network gateway.

25 24. The software-control application of claim 19, wherein the client-hosted part of the software application communicates to the network-hosted part of the software application through a telephone-access number and interactive-voice-response interaction.

25. The software-control application of claim 24, wherein the network-communication path is established through a telephony network using connection-oriented-switched-telephony lines.

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26. The software-control application of claim 21, wherein the network-communication path is established through the Internet using Internet Protocols.

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27. In an active data session conducted by a user operating a computerized node on a data-packet-network, a method for detecting an available higher priority access number from a list of known numbers and switching the computerized node to the higher priority number during the session comprising steps of:

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(a) connecting the computerized node to the network using a lower priority number included in the list of known numbers;

(b) identifying the current lower priority number in the list of known numbers;

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(c) comparing the priority assignment of the lower priority number with a priority assignments of other numbers in the list of known numbers;

(d) identifying one or more higher priority numbers contained in the list of known numbers;

(e) monitoring the identified higher priority numbers for connection availability; and

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(f) upon detecting an available higher priority number, switching the current data session to the higher priority number.

28. The method of claim 27, wherein the data-packet-network is the Internet network.

5 29. The method of claim 28 wherein in step (a), the computerized node is a personal computer accessing through an Internet Service Provider (ISP) and the list of access numbers comprise available alternative ISP numbers.

30. The method of claim 29 wherein in step (a), the listed access numbers represent numbers generic to more than one ISP.

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31. The method of claim 29 wherein in step (b), identification is performed in a CTI telephony switch by CTI software.

15 32. The method of claim 29 wherein in step (b), identification is performed in an Internet server by server software.

33. The method of claim 31 wherein in step (c), comparison is performed by CTI software associated with the CTI telephony switch.

20 34. The method of claim 32 wherein in step (c), comparison is performed by the server software associated with the Internet server.

35. The method of claim 33 wherein in step (d), identification is performed by CTI software associated with the CTI telephony switch.

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36. The method of claim 34 wherein in step (d), identification is performed by the server software associated with the Internet server.

37. The method of claim 29 wherein the priority states of each listed access number equate with cost of connection and operation of each number from the location of the personal computer.

5 38. The method of claim 35 wherein in step (e), monitoring includes calling the higher priority numbers periodically, the calls placed from the CTI telephony switch.

10 39. The method of claim 36 wherein in step (e), monitoring includes calling the higher priority numbers periodically, the calls placed from a CTI telephony switch and initiated from within the Internet server, the server communicating with the switch through a network gateway.

15 40. The method of claim 36 wherein in step (e), monitoring includes accessing connection servers associated with the higher priority access numbers, the connection servers providing availability status of the associated number.

20 41. The method of claim 40 wherein in step (e), the monitoring is performed by the server software associated with the Internet server.

42. The method of claim 41 wherein in step (f), notification is sent to the personal computer upon detecting a higher priority number and switching is performed according to user response.